

4. STACTOLÆMA.

I think that my *Barbatula olivacea* belongs to this genus, and should be called *Stactolæma olivacea*.

5. MEZOBUCCO, gen. n.

The type of this genus is *M. duvauceli*, a species which holds an intermediate position between *Cyanops* and *Xantholæma*. The culmen does not exceed the tarsus in length, the bill is pointed, not obtuse, as in *Xantholæma*, and the genus differs from *Cyanops* in the great length of the rictal bristles, which reach beyond the tip of the bill.

6. BARBATULA.

A new species of this genus may be described as follows:—

BARBATULA CHRYSOPYGA, sp. n.

Similar to *B. bilineata*, Sundev., and, like that species, having the eyebrow and cheek-stripe white and the rump orange, but differing in the edges of the quills and wing-coverts being orange instead of sulphur-yellow. Total length 3·3 inches, wing 1·85.

Hab. Gold Coast.

This form has been confounded by many writers with *B. leucolæma* and *B. subsulphurea*.

7. SMILORHIS.

SMILORHIS KILIMENSIS, sp. n.

Adult female. Similar to *S. leucotis*, but distinguished by having the lower back and rump white, contrasting with the mantle and upper part of the back. Total length 7 inches, wing 3·65.

Hab. Kilimanjaro district of E. Africa (*Hunter*).

Type in British Museum.

XLIV.—On the Birds of Barbados.

By Colonel HENRY W. FEILDEN, C.M.Z.S., F.G.S.

THE most noticeable feature in connection with the ornithology of the island of Barbados is the paucity of resident

species of birds; but there are several reasons which well account for this deficiency, and these may be considered under the headings of its geological structure, its geographical position, and the paucity of swamps and marshes, the almost total destruction of the natural forest-growth, which covered the island when first settled by Europeans in the beginning of the seventeenth century, and the wonderfully high state of cultivation which is the marked feature of the island at the present time.

Barbados is separated from the other islands of the Lesser Antilles by a great oceanic depression; soundings of from 1000 to 1500 fathoms being shown on the Admiralty charts between it and the islands of St. Vincent and St. Lucia, the nearest of the Lesser Antilles, which lie about one hundred miles to the westward. Between Barbados and the island of Tobago, to the southward, which latter has in all probability been connected with the mainland of South America since the introduction of its existing fauna and flora, we find a depth of over 1000 fathoms; to the eastward of Barbados the floor of the ocean rapidly sinks into the profound depths of the Atlantic. Though Barbados is not separated from the chain of the Lesser Antilles or the mainland of South America by any great expanse of ocean, yet I think the most cursory examination of its geological structure will satisfy the observer that it can lay claim to being a truly oceanic island, in the sense of its never having formed part of a continent since the introduction of its present, comparatively speaking, meagre fauna. A singular feature in the geological structure of Barbados is that, although it attains to a height of over 1100 feet, no true volcanic rocks, so far as I am aware, protrude themselves through the exposed strata of the island, which are sedimentary stratified rocks. I do not, of course, include in the sedimentary rocks the coral capping which covers more than six sevenths of the superficial area of Barbados, or about ninety-one thousand acres, whilst the area from which the coral has been denuded by subaerial causes, and where the basement rocks are exposed, occupies only about sixteen thousand acres. This denuded area is known

by the name of the "Scotland District," owing to its hilly and peaked character, and offers a most striking contrast to the gentle slopes and terraces of the coral-covered area, which is the part of the island generally seen by the casual visitor to its shores.

The strata which form the basement series of Barbados are extremely contorted and have been greatly disturbed; they consist of a variety of rocks, siliceous sandstones, calcareous sandstones, clays containing selenite, clays impregnated with mineral oil, and at some points veins of bituminous coal. Their precise age has not been accurately determined, but they are probably late Eocene or Miocene, and point to correlation with those of Trinidad, and consequently at one period of time to a connection with the South-American continent. It can hardly be doubted that these basement-rocks, or "Scotland Series," were formed either as estuarine or shallow-sea deposits, and in close contiguity to some great land-area. Resting unconformably on the "Scotland Series" are vast deposits of oceanic ooze, built up, in some cases almost entirely, from the tests of Rhizopods. The modern coral cap of the island has been built up step by step upon these thalassic oozes as they emerged at intervals from the ocean. It would therefore appear that between the period of the deposition of the rocks that form the basement-series of the island there must have been a submergence of not less than a thousand fathoms to have brought them into harmony with the surrounding floor of the ocean, and to have admitted of the deposition of the beds of deep-sea ooze which now rest upon them. The modern coral-coated island of Barbados dates back no further in time than the period when the elevatory process brought the deep-sea deposits sufficiently near the surface to admit of the reef-builders commencing work. The deep water that surrounds Barbados is proof that it has had no continental connection since it emerged as a coral-reef from the ocean. I believe that the examination of the flora and fauna of Barbados will show their comparatively recent origin. So far as I can judge, the mammals, reptiles, and land-molluses owe their introduction either to

ocean-currents, accidental occurrences, or to the direct agency of man, and a review of its avifauna does not point to a different conclusion. After careful investigation, I am unable to admit more than fifteen birds as residents, and in the case of one, *Tyrannus rostratus*, I am open to correction, though I saw it during six consecutive months. These residents are:—*Dendræca capitalis*, *Certhiola barbadensis*, *Euethia bicolor*, *Loxigilla barbadensis*, *Quiscalus fortirostris*, *Elainea martinica*, *Tyrannus rostratus*, *Eulampis holosericeus*, *Orthorhynchus cristatus*, *Zenaida amabilis*, *Chamæpelina passerina*, *Ardea virescens*, *Gallinula galeata*, *Fulica americana*, and *Puffinus auduboni*. In addition I have notes of sixty-seven other species, a large number of which, especially amongst the family of the Charadriidæ, are regular birds of passage. Others, again, are merely accidental wanderers, such as *Machetes pugnax*, *Vanellus vulgaris*, *Ægialitis hiaticula*, and *Hydrochelidon leucoptera*, the occurrence of which in Barbados is as remarkable as that of American species in Europe.

My stay in Barbados was one year, during which time I was absent from the island over four months on tours of inspection throughout the West Indies. The Catalogue I have drawn up, modest as it is in regard to numbers, represents a large amount of observations, which are chiefly due to my excellent friends Dr. C. J. Manning, M.D., and Mr. J. P. Massiah, Stipendiary Magistrate of Bridgetown, Barbados. I may say that whatever value these notes possess is chiefly due to the assistance afforded me by these two gentlemen. I am likewise greatly indebted to the Rev. G. Duncan Gittens, M.A., Rector of St. Lucy's parish, and to Mr. Herbert Hart, of Fairfield, St. Philip's.

† 1. MARGAROPS DENSIROSTRIS (Vieill.). Thrush.

I failed to find this species or any bird that might be entitled to the name of Thrush resident in the island, though Hughes, writing in 1750, gives the impression that such might have been the case at that date. I made every inquiry in regard to "Thrushes;" and though birds answering to their description are seen at intervals, yet I am inclined to

think they are only individuals passing through at the periods of migration. Dr. C. J. Manning obtained a fine specimen of *Margarops densirostris* in his garden at Bagatelle on the 2nd of March, 1889, which he kindly forwarded to me. It proved to be a male. It is not likely that so large and striking-looking a bird could be a resident in Barbados without the fact being known.

—2. *PARULA AMERICANA* (Linn.).

Mr. Herbert Hart, of Fairfield, St. Philip, gave me a mounted specimen of this species, which he had shot in his garden in the month of June, a very late date for this migratory bird to have remained in Barbados. Gosse gives the 20th of April as the latest date for its stay in Jamaica. On the 4th of November, 1888, I recognized one in an oleander-bush, within two feet of me, in a garden at Hastings, and subsequently I met with several others at various spots in the island.

—3. *DENDRÆCA CAPITALIS* (Lawr.). Yellow-bird.

This species is peculiar to Barbados. The bright yellow plumage of the male makes it a very conspicuous object. It is extremely common throughout the island from the higher elevations to the shore-line. It is often to be seen hopping among the stalks of the growing maize and other plants, though it is equally arboreal in its habits, and addicted to the shade of the broad-leaved sea-side grape (*Coccoloba*). Its food is chiefly insects. There was a pair of these pretty little birds that made their headquarters all the year through in a tree close to my dwelling, and I have seen one fly down and attack a large spider on the ground, which took it some time to kill. Wishing to see the species of spider, I stepped out and took it up; the little Yellow-bird only retreated a few paces, and the instant I dropped the spider, returned and snapped it up. This bird has a short and melodious song, of no great strength or compass, but in the mornings, shortly after sunrise, every grove and clump of trees resounds with their pleasing warble. The nest is a compactly built structure of grass and roots, with a few feathers interspersed,

dome-shaped, depth inside 3 inches, entrance $1\frac{1}{4}$ inch. The newly-hatched young are bright yellow-tinted.

—4. *DENDRÆCA STRIATA* (Forst.). Swamp Sparrow.

I first met with and obtained this species amongst the mangrove bushes bordering Valentia swamp on the 20th October, 1888. I was attracted by its sharp note; the coloured lad with me recognized it as the "Swamp Sparrow;" it is therefore in all probability an annual visitor. I saw two or three more at the same place later on in the year, but was unable to procure another example. When alarmed they hide in the thickest bush; the note is a monotonous "chip, chip, chip." The specimen obtained is either in winter plumage or in that of the young bird.

—5. *SIURUS NÆVIUS* (Bodd.).

From its small size and plain plumage this species may be more abundant than I suppose, as it ranges in winter throughout the West Indies. I only noted two examples in Barbados, one at Brandon, the residence of Mr. Edmund Taylor, on the 5th of November, 1888, and another which I procured at Chancery Lane on the 24th of the same month.

—6. *SETOPHAGA RUTICILLA* (Linn.). Goldfinch.

An annual migrant, arriving in Barbados towards the middle of September, where it is known by the name of Goldfinch and Christmas-bird. I observed individuals remaining as late as February. The bright plumage of the male bird makes it a very conspicuous object as it flits about from branch to branch amid the green foliage.

—7. *CERTHIOLA BARBADENSIS*, Baird. Sugar-bird.

The Barbados *Certhiola* is very abundant throughout the island, and when the great American aloe is in bloom may constantly be seen creeping and searching about its yellow blossoms, which appear equally attractive to the Humming-birds. It is also very partial to the moringa (*Moringa pterygosperma*) when in flower. It has a metallic note, which sounds to me as "zie, zie, zie," rapidly repeated; this it utters when flying as well as when perched in the trees; it

flies high and settles on the topmost branches of mahogany, manchineel, and tamarind trees.

+8. PROGNE DOMINICENSIS (Gmel.).

Schomburgk, in his 'History of Barbados' (p. 681), includes this species as a visitor to the island under the name of "The Large Swallow" (*Hirundo dominicensis*, Linn.)." As this bird is abundant and resident in the islands of Grenada and St. Vincent, I see no reason to doubt the correctness of Sir Richard Schomburgk's observation that it has been observed in Barbados.

+9. HIRUNDO ERYTHROGASTRA (Bodd.). Swallow.

An annual and abundant visitor, arriving in the end of August or beginning of September, and some remaining till February; they haunt the meadows near the shore. On the 10th of September I observed them at Chancery Lane flying by scores, both old and young. I have also many notes of having seen them in numbers in other parts of the island as late as December.

+10. VIREO CALIDRIS (Linn.).

Dr. Manning gave me a specimen shot in a garden near Hastings on the 17th September, 1888, and I obtained another on the 15th October from the same locality. Mr. W. B. Richardson likewise procured it in Barbados during the winter of 1885-86*. I do not consider this bird resident in the island, but merely an autumnal and winter visitant.

-11. PYRANGA RUBRA (Linn.).

Mr. C. B. Cory has recorded this species from Barbados, a specimen from that island being in the United States National Museum.

-12. LOXIGILLA BARBADENSIS, Cory. Sparrow.

Mr. Cory has separated the Barbados form of *Loxigilla* from *Loxigilla noctis* (Linn.): *vide* Auk, iii. p. 382 (1886). Resident, and one of the most common species of bird in the island, being even more tame and impudent in its conduct than an English city-bred Sparrow; it is a constant atten-

* Cf. Cory, Ibis, 1886, p. 472.

dant at the breakfast-table, entering by the open windows, perching on the backs of chairs and sideboards, and levying toll from the eatables placed on the table. It has a rather sweet but monotonous song as well as a chirp. It makes its nest, from March to June, fully exposed in the branches of trees, a large domed structure, composed of grass and roots, lined with finer material and a few feathers. The eggs are three in number, white, blotched and speckled with reddish brown. The old birds feed their young by regurgitation, putting their bills into the mouths of their nestlings.

—13. *EUETHIA BICOLOR* (Linn.). Cane Sparrow.

Common throughout the island. It is very noticeable when the guinea-grass is in flower, small parties are constantly flying from stem to stem, the birds clinging to them and feeding on the ripe seeds. Throughout the year it is found spread over the island, particularly on the sour-grass pastures. It has a peculiar flight, just before alighting it quivers its wings with a rapid motion, the wings vibrating like those of a Humming-bird. The nest is generally placed in low bushes, though I have found it at a considerable height in a tree. It is made of grass and fine roots, and is domed; the number of eggs three; they are white, with minute brown spots.

—14. *AGELEUS ICTEROCEPHALUS* (Linn.).

Dr. Manning procured a specimen of this species in the autumn of 1887, which he kindly placed in my collection. It must be a very rare and accidental visitor to the island.

—15. *DOLICHONYX ORYZIVORUS* (Linn.).

Dr. Manning shot a female of this species in October 1887; Mr. Herbert Hart has another in his collection of Barbados birds, shot some years ago. I came across a flock of seven at Chancery Lane on the 13th of October, 1888, out of which I shot two specimens; both proved to be males. They were quite tame, and when disturbed tried to hide themselves in some coarse sedge growing round a marshy spot. I

received another example, a male shot at Græme-Hall swamp on the 26th October, 1888. An example of this species has been procured by Mr. J. W. Wells in the island of Grenada. Mr. Cory records it from the Bahamas, Cuba, Jamaica, and Grenada. I expect that it will be found to be an annual visitor to Barbados during the autumnal migration.

—16. *QUISCALUS FORTIROSTRIS*, Lawr. Blackbird.

The Barbados Blackbird is found in large numbers throughout the island. It breeds in April, May, June, and July, sometimes in colonies. A favourite site for the nest, which is a large roughly built structure of grass and roots, is on the slender branches of the mahogany. The eggs, usually three in number, are very handsomely blotched and streaked with dark umber-brown on a greenish-lilac ground. Old and young flock together in autumn and visit the fields and savannahs in companies like our British Starling (*Sturnus vulgaris*). They do considerable damage to the planter by eating and destroying grain, but they also consume large numbers of insects, following the cattle in the fields for that purpose. The singular use these birds make of their tails has been remarked on by Ligon, writing nearly two centuries and a half ago, who thus refers to it :—"One thing I observe in these birds, which I never saw in any but them, and that is, when they flie, they put their train into severall postures; one while they keep it straight, as other birds; sometimes they turn it edge-waies, as the tail of a fish, and by and by put it three square, with the covering feather a top, and the sides downward." In the adult bird the iris is straw-yellow, in the young white. When in full breeding-plumage both sexes are alike, black glossed with purple on the upper parts, the female less brilliant than the male; the young are likewise black. Towards autumn the plumage in many cases assumes a decided chocolate-brown colour, but this is owing to a loss of colouring in the old feathers; they moult in August, September, and October; specimens procured at that time distinctly show the new black feathers underneath the sundried and abraded old ones.

+17. *ELAINEA MARTINICA* (Linn.). Peewhittler.

Mr. Cory has lately bestowed the specific name of *barbadosensis* on the form found in Barbados; I have, however, retained the older designation. This is a common bird throughout the island wherever groves of trees are to be met with. It is the first bird that heralds the approach of day, and just before dawn its cry of "pee-wee, pee-wee" is to be heard from tree and copse. It is a lively little creature, darting from tree to tree and perching on the ends of the branches, erecting its crest and uttering its singular notes, but extremely timid and shy if it finds itself observed.

+18. *TYRANNUS ROSTRATUS*, Selater. Rainbird.

I think that I may reasonably include this bird as one of the resident species, as I have seen it in the island during every month from December to July inclusive. On the 7th June, 1888, we obtained a nest with four eggs incubated, which was placed on the frond of a high palm-tree in the garden of Erdiston House. The nest was a slight fabric, composed of dried grass and roots. The eggs are very handsome, creamy white, with chocolate blotches at the larger end.

+19. *CHORDEILES VIRGINIANUS* (Sw.). Goatsucker.

Probably an annual visitor during the autumn, as a bird either of this or of some closely allied species is well known to the sportsmen of the island. I am indebted to Mr. Herbert Hart for a male specimen of *C. virginianus*, which he obtained in St. Philip's parish on the 29th September, 1887.

+20. *EULAMPIS HOLOSERICEUS* (Linn.). Doctor-bird.

Is extremely common and not at all shy. I did not obtain its nest. There is very little difference in the plumage of the sexes, but I fancy the female has a somewhat longer bill than the male. The trivial name of Doctor-bird, so frequently applied to Humming-birds in the West-Indian Islands, takes its origin, I believe, from the apothecaries having usually been the taxidermists throughout the West Indies, so that the negroes finding a sale for these birds with them, conceived the idea that they were used for medicinal purposes.

-21. *ORTHORHYNCHUS CRISTATUS* (Linn.). Doctor-bird.

Very abundant and excessively fearless; I have seen them humming round a blossom in the bush when within a yard of my face. It has a shrill note, frequently uttered when flitting from blossom to blossom. It very often perches on the telephone wires, seated quite upright in the position of a Kingfisher. The females strike me as having longer bills than the males. I found a nest with two young ones in it on the 30th of October; it was fastened to the edge of a leaf of the prickly pear; the similarity of this nest to the fruit growing on the same bush was so complete that when within a few inches I could hardly believe that it was not the fruit; my attention was attracted in the first instance by seeing the female apparently crouching on the top of a fruit. In the young the beak is yellow, short, triangular, and with a wide gape, showing its affinity to *Cypselus*. Eggs two, pure white.

Obs. I have frequently heard of other species of Humming-birds being seen in Barbados, but I have only obtained or observed myself the above-mentioned two species. *Trochilus colubris* has been so accurately described to me by a resident as having been observed by him in Barbados, that I have little doubt of its having occurred there.

+ 22. *COC CYGUS AMERICANUS* (Linn.).

A single example, a male, was shot at Græme-Hall swamp on the 6th of October, 1888. I am indebted to Mr. Herbert Hart for this specimen, which was forwarded to me in the flesh; it was very plump and in beautiful condition; its stomach contained remains of insects.

- 23. *CERYLE ALCYON* (Linn.). Loggerhead Mango-bird.

An annual visitor in considerable numbers during the autumn and winter. It frequents the shore, perching in the trees that edge the beach. I have noticed as many as a dozen individuals during the course of an afternoon's walk in the month of October. At Valentia swamp, where they were common in winter, they seemed to be in pairs, and pursued their antics in the air, gamboling with one another

and frequently uttering a harsh note, "churr, churr." I have been assured that individuals remain in Barbados throughout the year, especially in the vicinity of Consetts Bay and Joe River; but the nest has not been discovered, neither was I able to verify the fact of this species remaining the entire twelve months in Barbados.

+ 24. *STRIX FLAMMEA* (Wilson).

It is with considerable diffidence that I place the name of this Owl in the list, but as Schomburgk includes it without any doubt or hesitation, I do not like to ignore his statement. This Owl is very common in Grenada and in St. Vincent, the latter island being not one hundred miles distant from Barbados; its occurrence is therefore not improbable. Personally I found no trace of any Owl in the island.

+ 25. *PANDION HALIAETUS* (Linn.). Osprey.

An irregular and somewhat rare visitor in the fall. Several appeared during the month of October 1887. One of these is preserved in the collection of Dr. Manning; another, a female, shot about the same time, is in the possession of Mr. Herbert Hart. An adult male, shot at Græme-Hall swamp on the 28th September, 1888, was forwarded to me in the flesh by Dr. Manning.

+ 26. *CIRCUS HUDSONICUS* (Linn.).

I have the skin of an immature bird from the collection of Dr. Manning; it was obtained by that gentleman in St. Philip's parish during September 1886. This species had not previously been recorded from Barbados, and, according to Cory, has hitherto only been obtained in the West Indies in Cuba and the Bahamas.

Obs. Schomburgk gives *Buteo borealis*, Swainson, a place in his list as one of the indigenous birds of Barbados. This is an error; no member of the Falconidæ is resident in that island, nor can have been for over a hundred years, otherwise Hughes would certainly have referred to the circumstance in his 'Natural History of Barbados.' But a reference to Ligon's 'History' (p. 60) shows clearly that in his day, when the greater part of the island was clothed in natural forest, a

species of Buzzard was indigenous. This may have been *Buteo latissimus* (Wils.), at the present time numerous and resident in St. Vincent. Ligon writes :—"The birds of this place (Barbados) (setting two aside) are hardly worth the pains of describing: yet in order, as I did the Beasts, I will set them down. The biggest is a direct Bussard, but somewhat lesse than our grey Bussards in *England*, somewhat swifter of wing; and the only good they do is, sometimes to kill the Rats."

+27. *FALCO PEREGRINUS*, Tunstall.

I am indebted to Mr. E. N. Armstrong, of the 'Crane' Hotel, for a fine female example of this species, which was shot near his residence on the windward side of the island, 17th November, 1888.

Obs. *Falco columbarius*, Linn., is included by Schomburgk in his list as one of the indigenous birds of Barbados, but this is an error. It is, in all probability, an occasional visitor to the island, and a Hawk which one of our party saw at Chancery Lane on the 3rd of November, 1888, probably, from his description, belonged to this species. Mr. Wells has recorded it as an autumnal visitor to the island of Grenada, arriving along with the *Limicolæ*. On the 27th of October, 1888, whilst driving in Christchurch parish, a small Hawk dashed past the horse's head; it was, I think, undoubtedly *Falco sparverius*.

+28. *ZENAIDA AMABILIS*, Bp. Wood Dove.

This beautiful species is not uncommon in places where it obtains protection, being numerous in the grounds of Codrington College, where it nests on the fronds of the lofty palmistes. I have often seen it in the gardens about Bridgetown, especially in those of Government House and Bishops-court. During my stay in Barbados I neither fired at nor handled one of these birds, and I rather regret now that I did not obtain a specimen for complete identification. This species nests in cliffs as well as in trees. The Hon. Mr. H. King informed me that he had taken the young from the most precipitous side of Chalky Mount.

29. *CHAMÆPELIA PASSERINA* (Linn.). Ground Dove.

Resident and very numerous, especially on the sand-dunes which border some part of the coast. I have heard of as many as fifty couples having been shot in a day by two guns. Manchinceel bushes are very often selected as nesting-sites; the nest itself, composed of a few grass-stems and roots, is so frail that the two white eggs may often be seen through the structure. This bird frequently drops her eggs on the ground.

Obs. *Numida melagris*, Linn. Guinea-fowl. Common in a domesticated state, but does not run wild as in the island of Barbuda.

+30. *ORTYX VIRGINIANUS* (Linn.). Quail.

Is a very rare visitor to Barbados. Dr. Manning has a specimen shot at Bankhall, in St. Michael's parish, during September 1886; the same gentleman saw another in St. James's parish during September 1887, but did not succeed in shooting it. This species is included by Schomburgk in his list.

31. *SQUATAROLA HELVETICA* (Linn.). White-tailed Plover; Loggerhead; Rock Plover.

This is rather a rare autumnal visitant, in some years none alighting; it generally arrives after the Golden Plover, towards the close of the shooting-season; it hardly ever settles on the pastures or by the decoy-ponds, but on the rocky shore, where it consorts with Ringed Plovers, Turnstones, and Sanderlings. I procured a specimen on the 22nd of September, 1888.

32. *CHARADRIUS DOMINICUS*, Müll. Golden Plover.

Stragglers arrive as early as July and the beginning of August, but the main flights come with the first heavy weather after the 27th of August, and long experience and observation proves that this date is kept year after year with wonderful accuracy. The course of all the migratory Charadriidæ across Barbados in the autumn is from the north-west to south-east, and if the wind blows from south-east the birds are brought down to the island, for it appears to be a tolerably well established

observation that birds prefer migrating with a "beam" wind. A shift of wind from the north-east, with squally weather to the south-east, is ardently longed for by the Barbados sportsmen towards the end of August, as this forces the migratory hosts to alight instead of passing over at a great height, as they are seen to do when the wind is from the north-east. The first arrivals of this species are invariably black-breasted birds, showing that the old birds precede the young, and the first comers are nearly all males. The young birds without black on the breast appear about the 12th of September, and continue to pass till the end of October, sometimes stragglers are as late as November. Even in the most favourable seasons, only a fraction of the immense flights that pass over the island ever alight; but if, attracted by the green land and "mock-birds" pegged out near the shooter's hut, they deviate from their line of flight, they are doomed, for so well do the sportsmen imitate the call of the Golden Plover, and so irresistible is the charm, that the birds come down to it, and in spite of gaps in their ranks, they wheel round and dash past the shooter again and again till all are killed.

+ 33. *ÆGIALITIS SEMIPALMATA* (Bp.). Ring-neck.

This bird arrives in August and remains till the end of November; it is one of the last of the Charadriidæ to quit the island. It does not appear in large flocks, but consorts with *Tringa minutilla*, *Tringa fuscicollis*, and *Ereunetes pusillus*. It also affects the shore-line, running about among the sea-ware cast up by the waves.

+ 34. *ÆGIALITIS HIATICULA* (Linn.).

This must be a very rare visitor; I only obtained one example, which was shot at Chancery Lane on the 10th September, 1888. Mr. Massiah at once recognized its note as different from that of *Æ. semipalmata*, which attracted his attention, and he succeeded in shooting it. I submitted this specimen to Mr. Seebohm, who remarks, "It certainly is not *Charadrius semipalmatus*. Both the length of wing and of bill are too large, and the webs between the toes are much too

small. Wing from carpal joint 5·1 inches. It may be a large *Charadrius hiaticula*, which varies from 4·8 to 5·2, or it may be a small *Char. hiaticula major*, which varies from 5 to 5·5 inches. In the latter case it was bred in the British Islands and flew across the Atlantic, which is very improbable; in the former case it was most likely bred in Cumberland Sound."

+35. *STREPSILAS INTERPRES* (Linn.). Sandy Plover.

Arrives in August, and consorts with the Sanderlings about the sandy beaches and rocky shores. I obtained four on the 22nd of August in full breeding-plumage, and subsequently procured many others. The first arrivals were the adults, the immature birds arriving in September.

+36. *RECURVIROSTRA AMERICANA* (Gmel.).

Decidedly a very rare straggler to the island. Mr. Massiah informed me that he shot one at Valentia swamp in the autumn of 1880, and Mr. I. Tinling shot another on the 1st of October, 1888, at Finney's Hill, St. Philip's parish.

+37. *HIMANTOPUS NIGRICOLLIS* (Vieill.).

A rare visitor, though seldom a year passes without one being shot at Græme-Hall swamp. Mr. I. Tinling informed me that he saw one shot there in the autumn of 1887, and another on the 17th of September, 1888.

+38. *GALLINAGO WILSONI* (Temm.). The Snipe.

A regular autumnal visitor, sometimes in considerable numbers. Mr. Massiah has shot ten couple in a day at Chancery Lane; I have shot them in the same locality during the months of September, October, and November. There are very few spots in Barbados at all suitable for Snipe.

39. *MACRORHAMPHUS GRISEUS* (Gmel.). Duck-leg; Duck-bill.

Though a regular, is somewhat of a rare visitor, appearing along with flights of Yellow-legs (*Totanus flavipes*) in August and September. It is, however, sufficiently numerous to be given a local name by the Barbadian sportsmen. I have a specimen, a male, shot by Dr. Manning at Bagatelle on the

24th of August, 1888, and two others shot by Mr. Massiah at Chancery Lane on the following day. I have seen several other examples shot during 1888 at the latter place.

+ 40. MICROPALAMA HIMANTOPUS (Bp.). Cue.

Arrives with the Yellow-legs in July, and continues to pass all through August, and generally into the middle of September, when the flights cease, but stragglers drop in at intervals till October. This bird is easily attracted by the imitation of its call-note, and the flocks are very compact, so that at times many are brought down at one discharge of a gun. They feed on the edges of freshwater swamps, and do not alight on the dry meadows nor on the sea-beach. The flights only remain on the island for a few hours.

41. EREUNETES PUSILLUS (Linn.). Grass Nit.

Arrives in flocks along with *Tringa minutilla* and *Tringa fuscicollis* in the middle of July, and remains on the island till the end of October.

42. TRINGA MINUTILLA (Vieill.). Cockroach Nit.

Arrives in flocks about the middle of July, remaining till the end of October. I have frequently seen them flying in companies of thirty or forty. They are most confiding little birds, and alight almost at the feet of the gunners when called by the whistle. They are considered delicate eating, and sad havoc is at times made in their ranks by a discharge of small shot. The note may be described as resembling "crete-crete," frequently repeated.

43. TRINGA MACULATA (Vieill.). Chirp; October Chirp.

The Pectoral Sandpiper commences to arrive in July and August, increasing in its numbers till October, when they usually appear in immense flights; a few stragglers pass over as late as the early part of November. This bird, on its arrival in the island, frequents flooded and marshy spots, where the grass is short, likewise feeding on the ploughed lands. The Barbadian sportsmen, many of whom have the most discriminating ear for the notes of the various migratory birds, consider that there is a difference between the

notes of the smaller and earlier arrivals, which they designate "Chirps," and those of the later arrivals, which are called "October Chirps"; these are, as a rule, larger and finer-looking birds, but I think it is merely that with this species the immature precede the adult birds on the southward migration. Mr. Massiah has drawn my attention to a habit of this bird, which I have not previously seen noticed; when reaching the ground, and alighting from passage, all the individuals in the flight throw themselves on the ground, with their breasts touching it, in the position of a brooding hen or pigeon on eggs. Has this habit anything to do with its trivial name of Pectoral Sandpiper?

44. *TRINGA FUSCICOLLIS* (Vieill.). Grey Nit.

Arrives in July and continues on the island till the end of November, receiving additions to its numbers. It flies in company with *E. pusillus* and *T. minutilla*, and I have brought all three down at one shot. They are considered good eating, and numbers are shot when larger birds are not on the wing. No amount of shooting at them will deter these birds from returning to the edges of the same small swamps to feed, until all are killed.

45. *TRINGA CANUTUS*, Linn.

This is included by Schomburgk in his list of Barbados birds, and he also ascribes to it the local name of "Mopus," which, however, is not recognized at the present day by the Barbados gunners. It is evidently a very rare straggler to the island. I have a single example shot at Chancery Lane on the 6th of September, 1888, and I did not hear of any others being procured during that season.

†46. *MACHETES PUGNAX* (Linn.).

Writing in 1848, Schomburgk includes this species in his list, and remarks:—"The Ruff Sand Piper is a British bird; and I have been informed that it is the first time that this species has been recorded as having been found on the other side of the Atlantic. Mr. Bishop sent it to me among other migrating birds, and observed that its name was not known, from which I infer that its occurrence in Barbados is a

singular circumstance." I am indebted to Mr. H. Alleyne, of The Ridge, Barbados, for presenting me with a specimen of the Ruff in full breeding-plumage, which was shot at Græme-Hall swamp in 1878 by Mr. H. Simpson, of Bridgetown.

47. *CALIDRIS ARENARIA* (Linn.). Sandy Snipe.

Arrives in August and remains in Barbados till the end of the year. I only met with it on the sandy shores of bays in small parties of four or five. Specimens I procured in August were in complete winter plumage.

+ 48. *LIMOSA HÆMASTICA* (Linn.). Godwit.

An annual visitor, in some years far more numerous than in others, generally arriving in October. Mr. Massiah informed me that he has a note that on the 10th of October, 1878, this species passed over the island in large and continuous flocks the whole day. I have an example in my collection, a male, shot at Græme-Hall swamp by Mr. H. Hart on the 6th of October, 1888.

+ 49. *VANELLUS VULGARIS*, Bechst.

Dr. C. J. Manning has in his aviary a live Lapwing, which was shot at and injured in one wing on the 24th of December, 1886, in the island of Barbados. This bird had been eighteen months in confinement when I saw it, and appeared to be quite healthy. I have already recorded this remarkable occurrence in the 'Zoologist' for 1888, p. 301.

50. *SYMPHEMIA SEMIPALMATA* (Gmel.). White-tailed Curlew.

This is an annual, but not by any means an abundant, visitor. I obtained two examples in August, and another on the 3rd of September, 1888, at Chancery Lane.

51. *TOTANUS MELANOLEUCUS*, Gmel. Pika.

This bird arrives as early as May; I have a note of three having been seen at Græme-Hall swamp on the 5th of May, 1888 (*vide* C. Manning), but the main flights occur during September and October, arrivals continuing in diminished

numbers till the middle of November. This is one of the most highly esteemed for the table of the migratory Waders. It appears in comparatively small parties, a flock of twelve or fifteen arriving together is considered a large flight.

52. *TOTANUS FLAVIPES*, Gmel. Longlegs.

Arrives in flocks about the 15th of July, though stragglers put in an earlier appearance. I shot an example on the 4th of July at Græme-Hall swamp. The passage lasts till the middle of September, only odd birds appearing after that date. The Yellowshanks is the most numerous of the migratory Waders, and generally forms the chief feature in the bag of the Barbadian sportsman. The flocks do not, however, remain long on the island, but pass on after a few hours' stay.

53. *RHYACOPHILUS SOLITARIUS* (Wils.). Black-back.

This species is hardly reckoned a game bird by the Barbadian sportsmen, and is not generally put up with the bunches of dead fowl, as it is supposed to spoil them. It has a strong and disagreeable odour, very noticeable when skinning a specimen. It never flies in flocks, but I have seen them collected in some numbers in wet meadows, when, if disturbed, they fly off in pairs or independently. This bird arrives in July and remains till the end of November.

54. *TOTANUS MACULARIUS* (Linn.). Wag; Spotted Wag.

This species is very common in Barbados, arriving in large numbers in July and August. I shot an immature bird on the 4th of July, 1888, and I have been assured on good authority that examples may be met with in the island during every month of the year, especially about the streams in the Scotland District. It resorts on arrival to any small piece of swampy ground, and also lies out in dry yam-fields near swampy spots; it is likewise a sea-shore feeder, for I have often flushed it from the coral-reef at low water, and small parties, both in the adult and immature dress, may be seen on the sandy beaches following up the retreating waves, like Sanderlings.

55. *BARTRAMIA LONGICAUDA* (Bechst.). Cotton-tree Plover.

Generally arrives about the middle of August, and a few remain till March. On arrival the flocks break up and scatter over the grass-lands, cornfields, yam and sweet-potatoo patches, feeding on grasshoppers, beetles, and other insects. They are not attracted by the "mock birds," neither do they respond to the whistle of the sportsman. They run as fast as a Guinea-fowl, and generally rise well out of shot. Their note is peculiarly pretty, a soft liquid cry. The local name given to this bird took its origin from its habit of chiefly frequenting the cotton-fields, when that plant was cultivated in Barbados. It is recorded from the island of Grenada by Mr. Wells, and Mr. Lawrence remarks (Proc. U.S. Nat. Mus. p. 628, 1886) that this is an addition to the fauna of the Lesser Antilles. But apparently Schomburgk's list of the birds of Barbados, where this species is included, had been overlooked.

+ 56. *TRINGITES RUFESCENS* (Vieill.).

The Buff-breasted Sandpiper is of sufficiently rare occurrence in Barbados not to have received a local name. Dr. Manning gave me an example which he shot in the autumn of 1887, and I have another, a male, which I procured at Chancery Lane on the 6th of October, 1888. I have amongst the series in my collection a specimen from Barbados, collected by the late Lt.-Colonel Wedderburn, of the 42nd Highlanders (*circa* 1847). Mr. Massiah's description of this bird to me was quite sufficient to identify it even before I saw a specimen; he likened it to a miniature Bartram's Sandpiper, with peculiar markings under the wings, and he considered that individuals appeared annually on autumn migration in Barbados. Cory has hitherto only described it as "accidental" in the West Indies, from the island of Cuba.

+ 57. *NUMENIUS HUDSONICUS* (Lath.). Crook-billed Curlew; Woodcock.

It arrives early in August, flying very often in pairs, but chiefly towards the middle of September. It is by no means so abundant a visitor as the next species, *N. borealis*. I ob-

tained, however, several examples during the autumn of 1888.

58. *NUMENIUS BOREALIS* (Forst.). Chittering Curlew.

Arrives about the end of August, but passes more frequently in September. The first I obtained in 1888 was on the 5th of September, when immense numbers passed over the island, though comparatively few alighted. The same day great flights of Golden Plover (*Charadrius dominicus*) and Longlegs (*Totanus flavipes*) arrived; I saw over a hundred of each of these species shot at one stand by a single gun.

Obs. I did not observe *N. longirostris*, nor does it appear to be known to the sportsmen of Barbados, who would at once recognize it, if it occurred, by its great length of bill.

59. *ARDEA HERODIAS*, Linn. Grey Gaulding.

This fine species is a regular autumn visitor, arriving in October and November in parties, sometimes consisting of from ten to twelve individuals. I shot a fine example at Chancery Lane on the 24th of October, 1888; the outspread wings measured seventy inches from tip to tip. Dr. Manning, Mr. B. H. Belgrave, and other gentlemen sent me specimens during the autumn of 1888.

60. *ARDEA EGRETTA*, Gmel. White Gaulding.

A rare visitor. I procured one at Græme-Hall swamp on the 4th of July, 1888, an adult female, in beautiful plumage. It was alone at the time.

+ 61. *ARDEA VIRESCENS*, Linn. Gaulding.

Resident, and tolerably abundant in those places where any protection is afforded. In the beautiful grounds of Codrington College it breeds freely, nesting on tall trees; it is there quite fearless, and the old birds come down from their nests to the ornamental water in front of the building. The nest is a frail structure of twigs; the number of eggs two or three, of a pale green colour. This species is common at Valentia swamp, where I have disturbed as many as a dozen from a single tree at one time; but in most parts of the island it is persecuted at all seasons, and consequently

has become very wary. I found the breeding-season to be in May, June, and July.

+ 62. *PORZANA CAROLINA* (Linn.). Two-penny Chick.

Though this Rail now-a-days goes by the name of Two-penny Chick, the bird described by Hughes (1750) under the same appellation was undoubtedly a Grebe. This Rail is a regular visitor to Barbados during the months of October and November. When flushed from a swamp and driven to seek refuge in a dry place, it has a habit of running into holes or poking its head under cover, and in this situation I have seen it captured by hand.

63. *GALLINULA GALEATA* (Licht.). Red-seal Coot.

Resident. A few still lingered at Græme-Hall swamp in 1888, from whence I obtained a nest with seven eggs in the month of July, when I fully identified the bird. It used to be plentiful at several spots in the island, particularly so at Valentia swamp and at a pond on the Three-Houses estate, but it has been exterminated, I think, in those places.

+ 64. *IONORNIS MARTINICA* (Linn.).

This Purple Gallinule must be a rare and accidental visitor. I have a specimen shot by Dr. Manning in the autumn of 1887, and Lieutenant Venour, of The West-India Regiment, informed me that he saw another captured in the same month and year by some boys with a dog, in the swamp below St. Ann's Fort.

+ 65. *FULICA AMERICANA*, Gmel. White-seal Coot.

Resident. A few still lingered at Græme-Hall swamp as late as 1888, whence I procured an example in August. I am afraid it was one of the last of its race. Mr. A. M. McLean told me that twenty-five years ago he could remember both the Waterhen and Coot being abundant in the swamp. Mr. Spencer, the owner at that time, would not allow them to be molested, and it was no uncommon occurrence to see twenty or thirty of both species swimming together on the open-water spaces in the swamp. The cutting down of the bush around Valentia swamp a few years

ago banished them from there. The bird must soon be extinct as a resident in the island.

+66. *BERNICLA BRENTA* (Pallas).

I think I am fully justified in including the Brent Goose as having certainly visited Barbados on one occasion. My authority is Mr. J. P. Massiah, J.P., who shot the bird in question at Chancery Lane on the 15th of November, 1876. His accurate description leaves no doubt on my mind that the bird was of this species. During an experience of over thirty years, Mr. Massiah has never seen but this one Wild Goose in Barbados, nor could I hear from any other source of Wild Geese having been seen or obtained, except in this single instance.

+67. *DENDROCYGNA VIDUATA* (Linn.).

A flock of twenty-seven of these beautiful Ducks appeared in Græme-Hall swamp in September 1887; one that was slightly wounded was taken alive to Dr. Manning, who placed it in his aviary; a year subsequently I saw it alive and well. Cory records this species in the West Indies as only from Cuba, and there introduced.

+68. *QUERQUEDULA DISCORS* (Linn.). Blue-winged Teal.

An annual visitor in considerable numbers, generally arriving about the first week in October, and continuing to do so at intervals till Christmas. I shot several examples.

69. *SPATULA CLYPEATA* (Linn.). Spoonbill.

An annual visitor in small numbers during the months of October and November. I have examples procured at Chancery Lane.

+70. *ERISMATURA RUBIDA* (Wils.).

A male shot in the swamp at Chancery Lane on the 13th of September, 1888, by Mr. W. Pearson is now in my collection. Another was obtained by Mr. I. Tinling at the same place in the fall of 1887. It is a rare straggler to the island. The diving powers of this Duck are remarkable. The beautiful shade of cobalt-blue which suffuses the upper

mandible of the adult male bird fades very soon after death. The stomach of the bird shot by Mr. Pearson was full of grass-seeds.

71. *FREGATA AQUILA* (Linn.). Cobbler.

The local name given I have heard applied to the Frigate-bird in Barbados. It is included by Schomburgk in his list, and I have myself seen it floating over the island and passing at a great height. Mr. Massiah shot one some years ago at Chancery Lane.

72. *PELECANUS FUSCUS* (Linn.). Pelecan.

An irregular visitor, but sometimes, as in 1886 and 1887, appearing in flocks of hundreds. I saw two or three in the island during 1888. Lieutenant R. E. Stuart, R.A., fired at one near Needham's Point on the 27th of October, 1888. The Père du Tertre, in his 'Natural History of the Antilles' (vol. ii. p. 271), mentions that a great mortality occurred amongst these birds in the year 1656 during the month of September, and that the shores of the islands of St. Lucia, St. Vincent, Bequia, and the Grenadines were strewn with their dead bodies.

73. { *SULA SULA* (Linn.).
 { *SULA PISCATOR* (Linn.). Booby.

I have seen Boobies outside Carlisle Bay, but as I was unable to obtain a specimen for identification, I cannot say to which of these species they belonged; probably both occur. Schomburgk includes both of them in his list. The shores of the island do not seem to attract many sea-birds, I hardly ever saw one close in-shore; but the fishermen told me that when out flying-fish catching, they are often surrounded by crowds of Gulls, Boobies, Frigates, and Petrels, when from ten to twenty miles from Barbados. Any resident interested in adding to our knowledge of the ornithology of Barbados should instruct the fishermen to bring in specimens of the birds they meet with, and I am sure the list would be considerably increased by so doing, or, better still, if he had the fortitude, he should accompany the fishermen in their boats.

74. PHAETON ÆTHEREUS (Linn.).

I have seen Tropic-birds when entering and leaving Carlisle Bay on board the mail steamers ; not having obtained an example I cannot state that this is the species with absolute certainty, but as it is the one which resides and breeds in the island of Grenada, in all probability it extends its flight to Barbadian waters. A Tropic-bird was captured after a gale in 1877 near Chancery Lane, but was not preserved.

75. LARUS ATRICILLA, Linn.

An occasional visitor. I have a specimen shot by Dr. Manning in the summer of 1887, and another shot on the 24th of July, 1888, was brought to me in the flesh. As this bird is numerous, and breeds around the island of Grenada, it is somewhat singular that they so seldom visit Barbados, but this island apparently offers few attractions to sea-birds.

76. STERNA ANGLICA, Montagu.

I have a specimen of this Tern shot by Mr. Chase at Græme-Hall swamp on the 6th of October, 1888, and another procured at the same place on the following day.

77. STERNA ANTILLARUM (Less.).

Obtained at Chancery Lane by Mr. Massiah on the 8th of September, 1888, and another by Dr. Manning on the 17th of October.

+78. HYDROCHELIDON LEUCOPTERA (Schinz).

I obtained at Chancery Lane on the 24th of October, 1888, an immature example of a Black Tern, which I took to be *H. lariformis* (Linn.), but on submitting it to Mr. Howard Saunders, he came to the conclusion that it is a White-winged Black Tern. This species is of very rare occurrence in North America, only one having been hitherto obtained on that continent ; it is an addition to the fauna of the West Indies.

+79. HYDROCHELIDON HYBRIDA (Pallas).

In the fourth edition of Yarrell's 'British Birds' (vol. iii. p. 529), the editor, Mr. Howard Saunders, states that a mounted specimen, marked as obtained in Barbados, is in

the British Museum, presented by Sir R. Schomburgk, who, however, did not include it in his list of the birds of that island.

+ 80. *STERCORARIUS CREPIDATUS* (Gmel.).

An example of this species was brought to me alive on the 10th of July, 1888. I recorded the circumstance in 'The Zoologist' for 1888, p. 350.

+ 81. *PUFFINUS AUDUBONI*, Finsch.

A short notice of the breeding of this species has already been contributed to this Journal (*vide* 'The Ibis,' 1888, p. 60). It may be considered as a resident species, for on visiting the bird-rock in October several were captured in holes. It bred in considerable numbers this year, and the eggs were deeply incubated by the end of March.

+ 82. *PODICEPS DOMINICUS* (Lath.).

Schomburgk includes this species in his list of the Birds of Barbados. Undoubtedly one species of Grebe, if not more, visits the island in autumn and winter. I did not procure a specimen, but the description given me of a bird seen at Chancery Lane in 1887 undoubtedly referred to a Grebe.

XLV.—*Further Notes on the Birds of the Canary Islands* *.

By E. G. MEADE-WALDO.

(Plates XV., XVI.)

IN the middle of February of this year I paid another visit to the Island of Fuerteventura, meeting by chance in Las Palmas a kindred spirit, Dr. Percy Rendall, of Gambia, who accompanied me. A fortnight later Canon Tristram, whom I had not expected to see, arrived. My principal objects in this visit were to observe the habits of the Chat which I had procured the previous year, to have another good look at the Cream-coloured Courser and Houbara Bustard on their breeding-grounds, and to get living specimens of as many species as I could. This I failed in, being too early for young

* See above, p. 1.